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Hasama

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(54) **INFORMATION PROCESSING APPARATUS, CONTROL METHOD THEREOF, AND PROGRAM**

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(51) **Int. Cl.**

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G06T 1/00	(2006.01)
G06F 21/10	(2013.01)
H04N 1/00	(2006.01)
G06K 15/02	(2006.01)

(52) **U.S. Cl.**

CPC ***G06T 1/0021*** (2013.01); ***G06F 3/1206*** (2013.01); ***G06F 3/1242*** (2013.01); ***G06F 3/1285*** (2013.01); ***G06F 3/1296*** (2013.01); ***G06F 21/10*** (2013.01); *G06F 3/1297* (2013.01); *G06K 15/02* (2013.01); *H04N 1/00204* (2013.01)

(58) **Field of Classification Search**

USPC 358/1.15, 1.13, 1.18, 501, 505, 530, 358/537, 540, 401, 448, 452, 453, 462, 463, 358/464, 470

See application file for complete search history.

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(57) **ABSTRACT**

An information processing apparatus which causes a printing apparatus to print an image to which information is added, includes a causing unit for causing, when a setting is specified for adding information to an image and the information cannot be acquired from a router, the printing apparatus not to print the image, and for causing, when a setting is specified for adding information to an image and the information can be acquired from a router, the printing apparatus to print an image to which the acquired information is added.

5 Claims, 11 Drawing Sheets

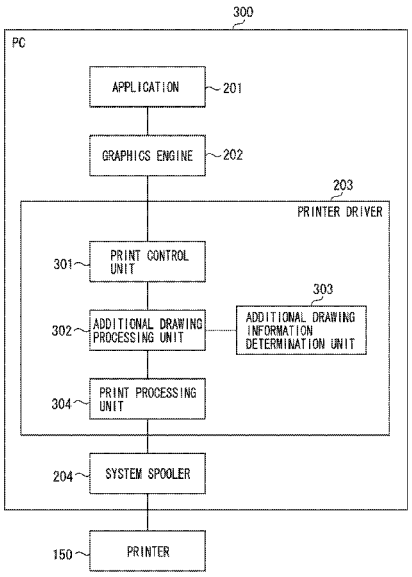

FIG. 1

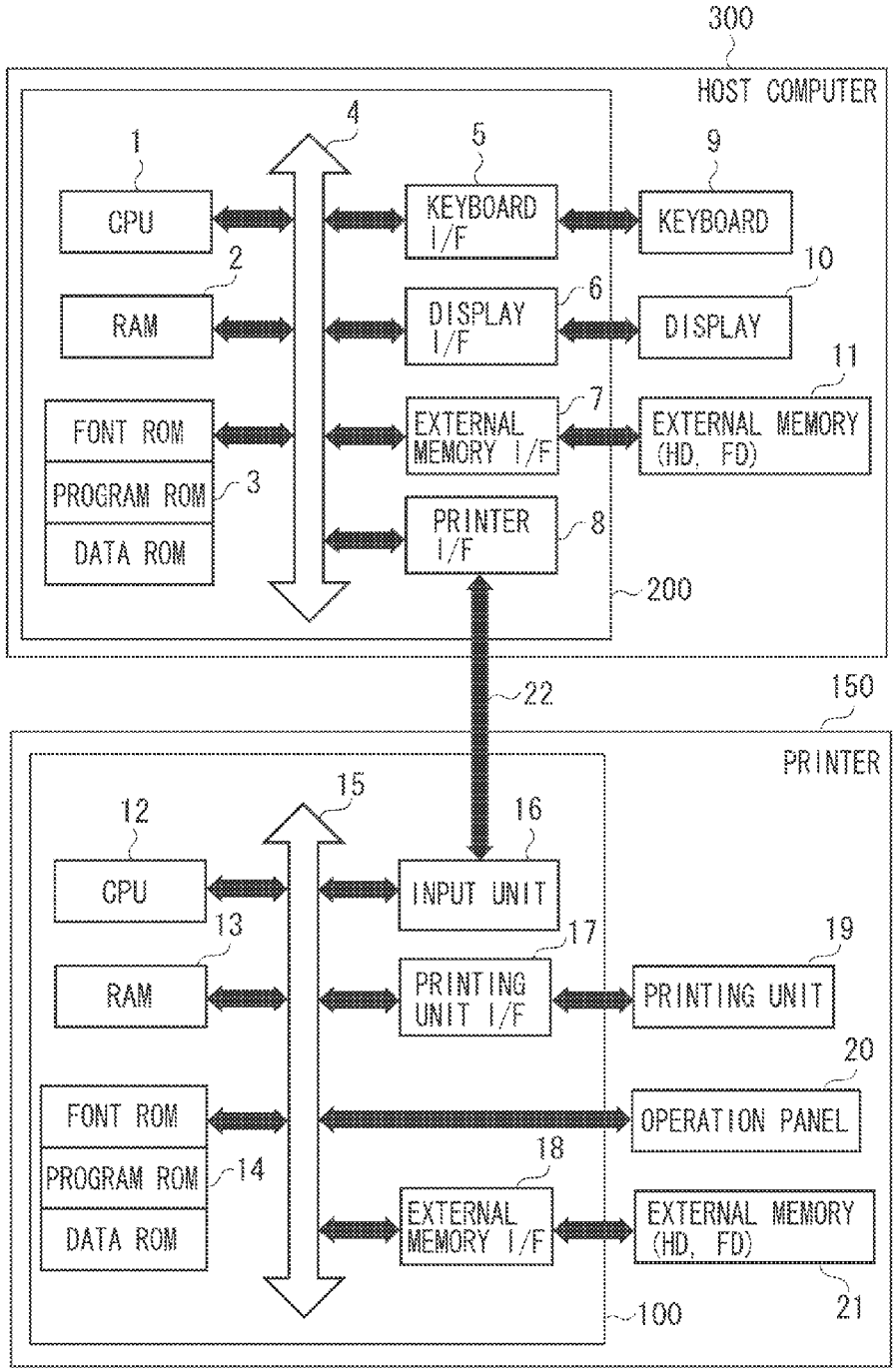
300
HOST COMPUTER
1
CPU
2
RAM
FONT ROM
PROGRAM ROM
DATA ROM
3
4
5
KEYBOARD I/F
6
DISPLAY I/F
7
EXTERNAL MEMORY I/F
8
PRINTER I/F
9
KEYBOARD
10
DISPLAY
11
EXTERNAL MEMORY (HD, FD)
200
22
150
PRINTER
12
CPU
13
RAM
FONT ROM
PROGRAM ROM
DATA ROM
14
15
16
INPUT UNIT
17
PRINTING UNIT I/F
18
EXTERNAL MEMORY I/F
19
PRINTING UNIT
20
OPERATION PANEL
21
EXTERNAL MEMORY (HD, FD)
100

FIG. 2

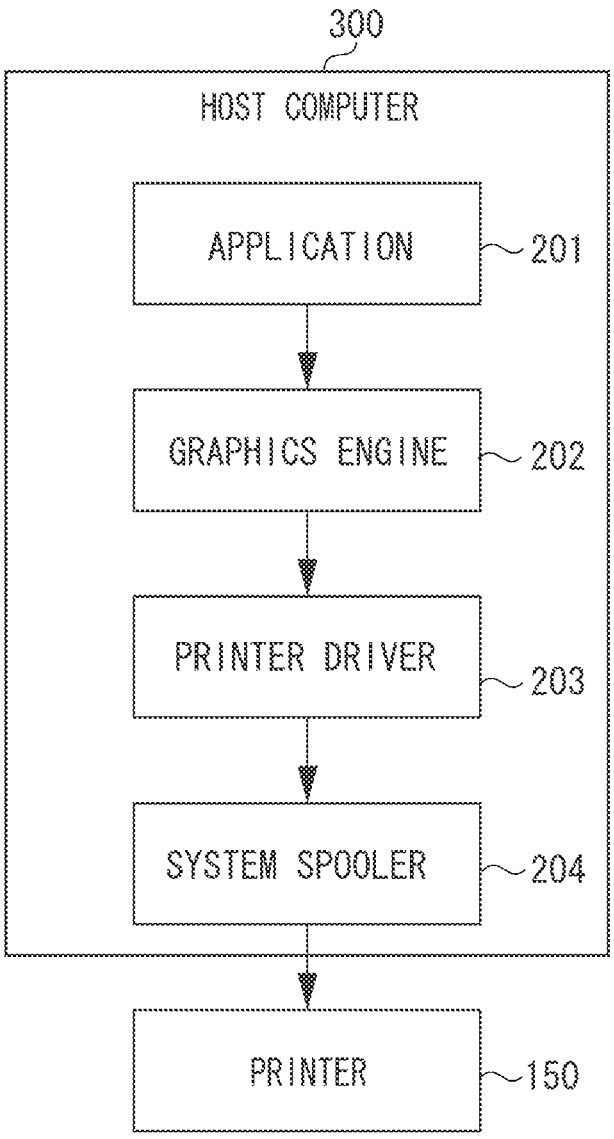
300
HOST COMPUTER
APPLICATION
201
GRAPHICS ENGINE
202
PRINTER DRIVER
203
SYSTEM SPOOLER
204
PRINTER
150

FIG. 3

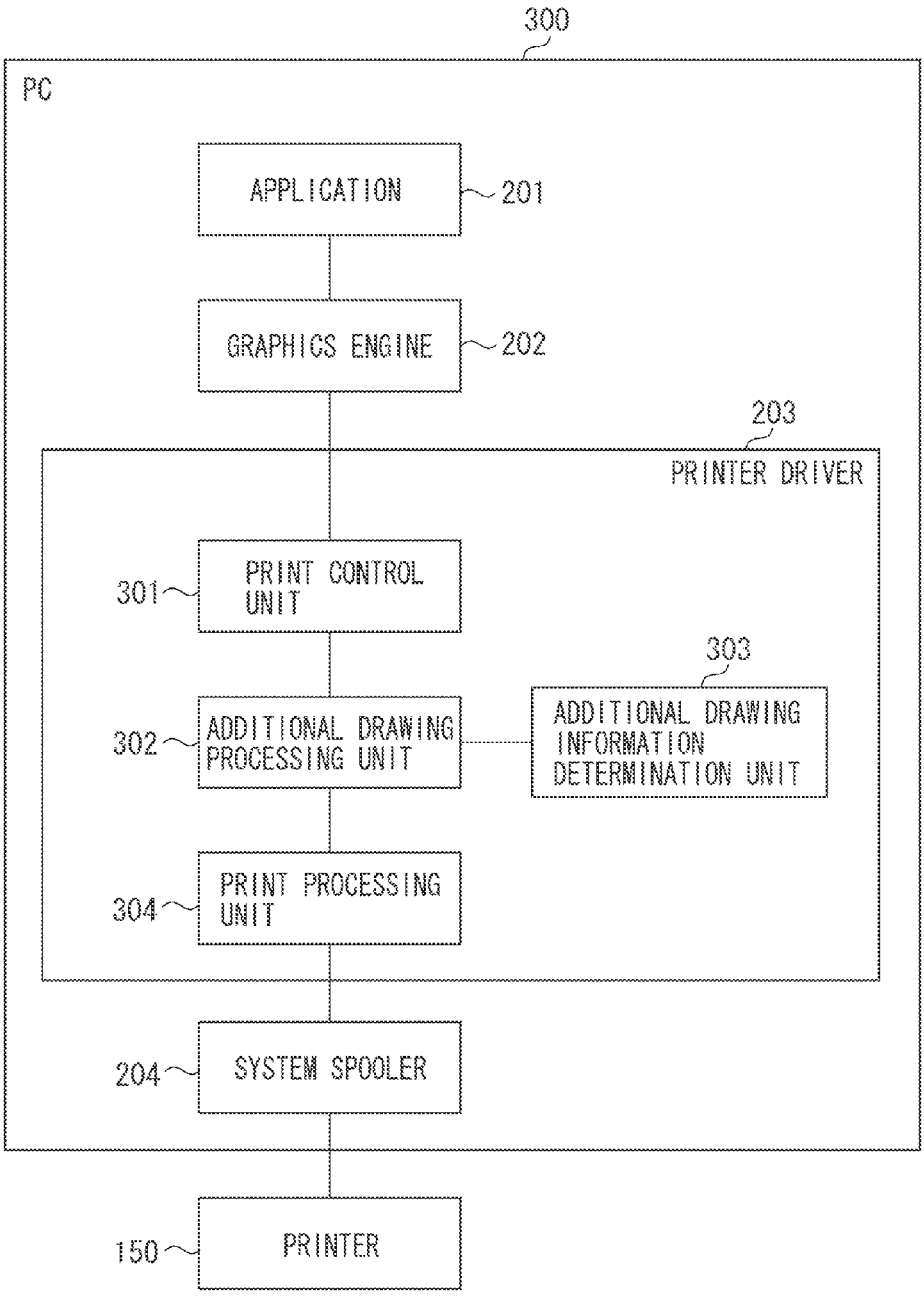
300
PC
APPLICATION
201
GRAPHICS ENGINE
202
203
PRINTER DRIVER
301
PRINT CONTROL UNIT
303
302
ADDITIONAL DRAWING PROCESSING UNIT
ADDITIONAL DRAWING INFORMATION DETERMINATION UNIT
304
PRINT PROCESSING UNIT
204
SYSTEM SPOOLER
150
PRINTER

FIG. 4

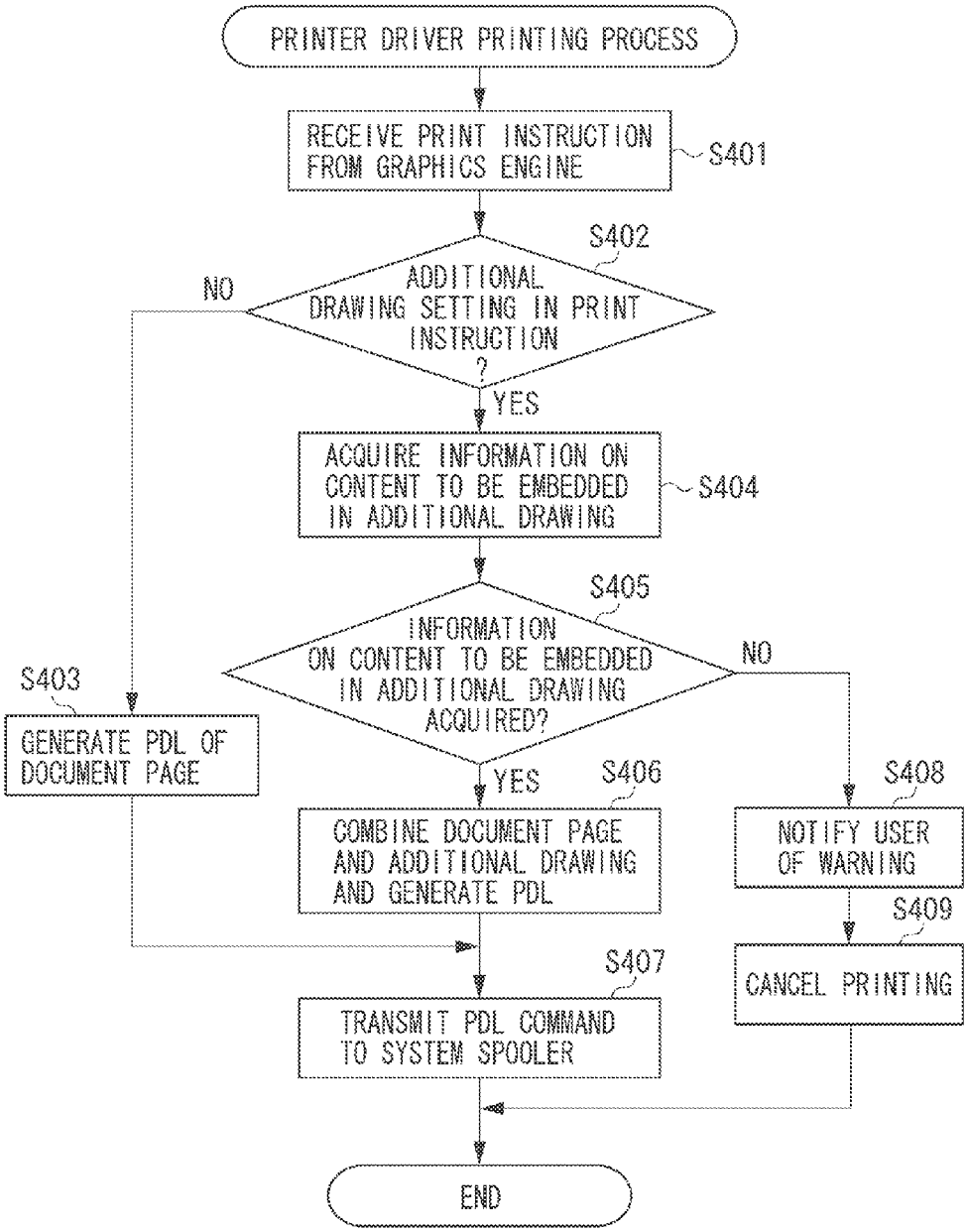
PRINTER DRIVER PRINTING PROCESS
RECEIVE PRINT INSTRUCTION FROM GRAPHICS ENGINE
S401
S402
ADDITIONAL DRAWING SETTING IN PRINT INSTRUCTION ?
NO
YES
ACQUIRE INFORMATION ON CONTENT TO BE EMBEDDED IN ADDITIONAL DRAWING
S404
S405
INFORMATION ON CONTENT TO BE EMBEDDED IN ADDITIONAL DRAWING ACQUIRED?
NO
YES
S403
GENERATE PDL OF DOCUMENT PAGE
S406
COMBINE DOCUMENT PAGE AND ADDITIONAL DRAWING AND GENERATE PDL
S408
NOTIFY USER OF WARNING
S409
CANCEL PRINTING
S407
TRANSMIT PDL COMMAND TO SYSTEM SPOOLER
END

FIG. 5

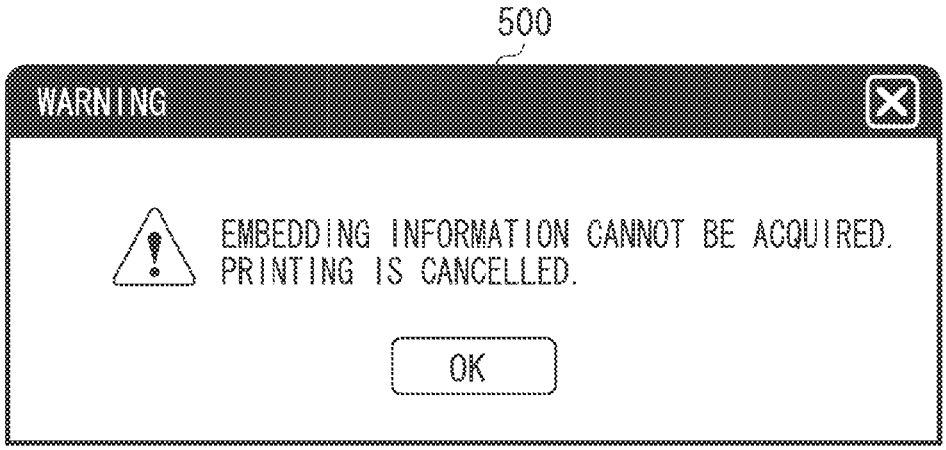
500
WARNING
EMBEDDING INFORMATION CANNOT BE ACQUIRED.
PRINTING IS CANCELLED.
OK

FIG. 6

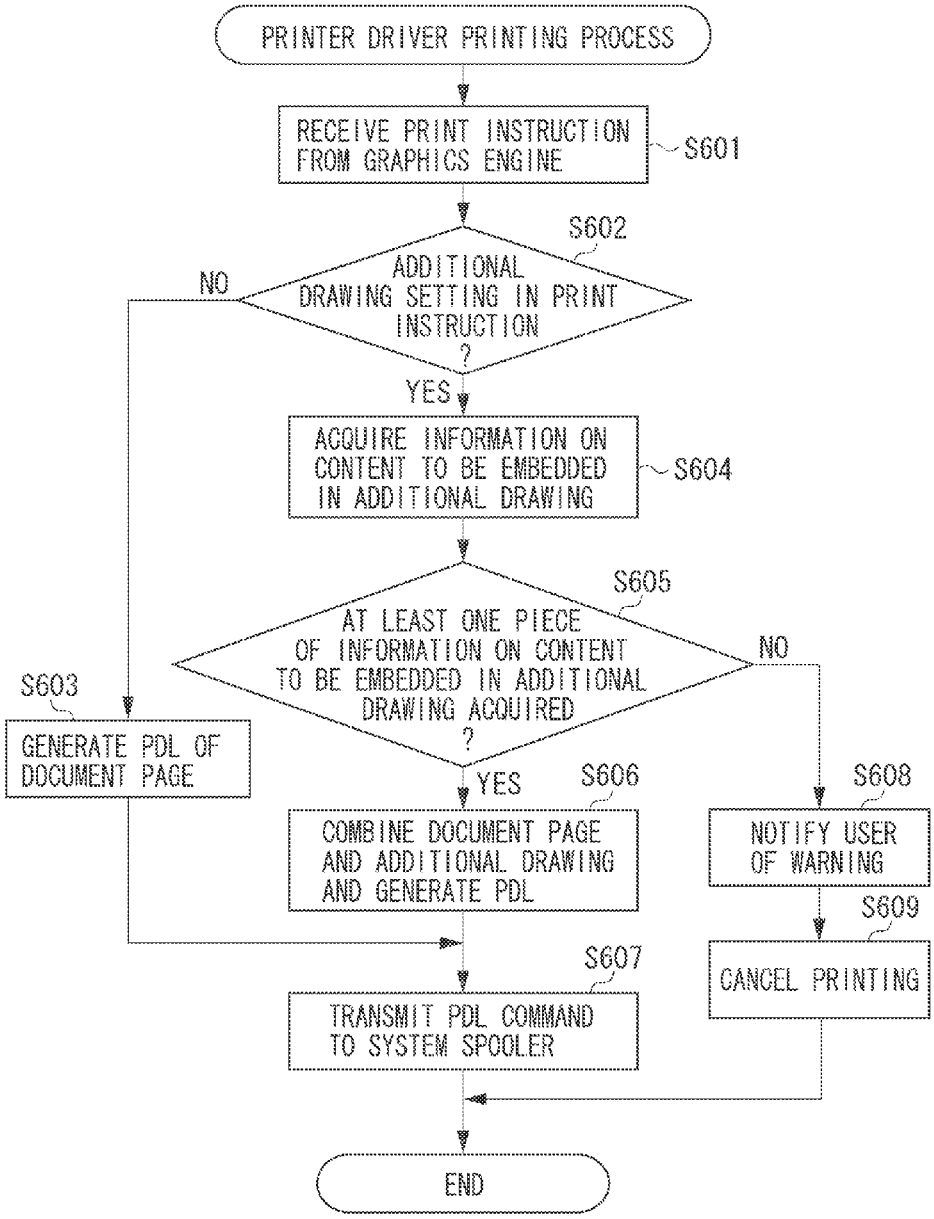
PRINTER DRIVER PRINTING PROCESS
RECEIVE PRINT INSTRUCTION FROM GRAPHICS ENGINE
S601
S602
ADDITIONAL DRAWING SETTING IN PRINT INSTRUCTION ?
NO
YES
ACQUIRE INFORMATION ON CONTENT TO BE EMBEDDED IN ADDITIONAL DRAWING
S604
S605
AT LEAST ONE PIECE OF INFORMATION ON CONTENT TO BE EMBEDDED IN ADDITIONAL DRAWING ACQUIRED ?
NO
YES
S603
GENERATE PDL OF DOCUMENT PAGE
S606
COMBINE DOCUMENT PAGE AND ADDITIONAL DRAWING AND GENERATE PDL
S608
NOTIFY USER OF WARNING
S609
CANCEL PRINTING
S607
TRANSMIT PDL COMMAND TO SYSTEM SPOOLER
END

FIG. 7A

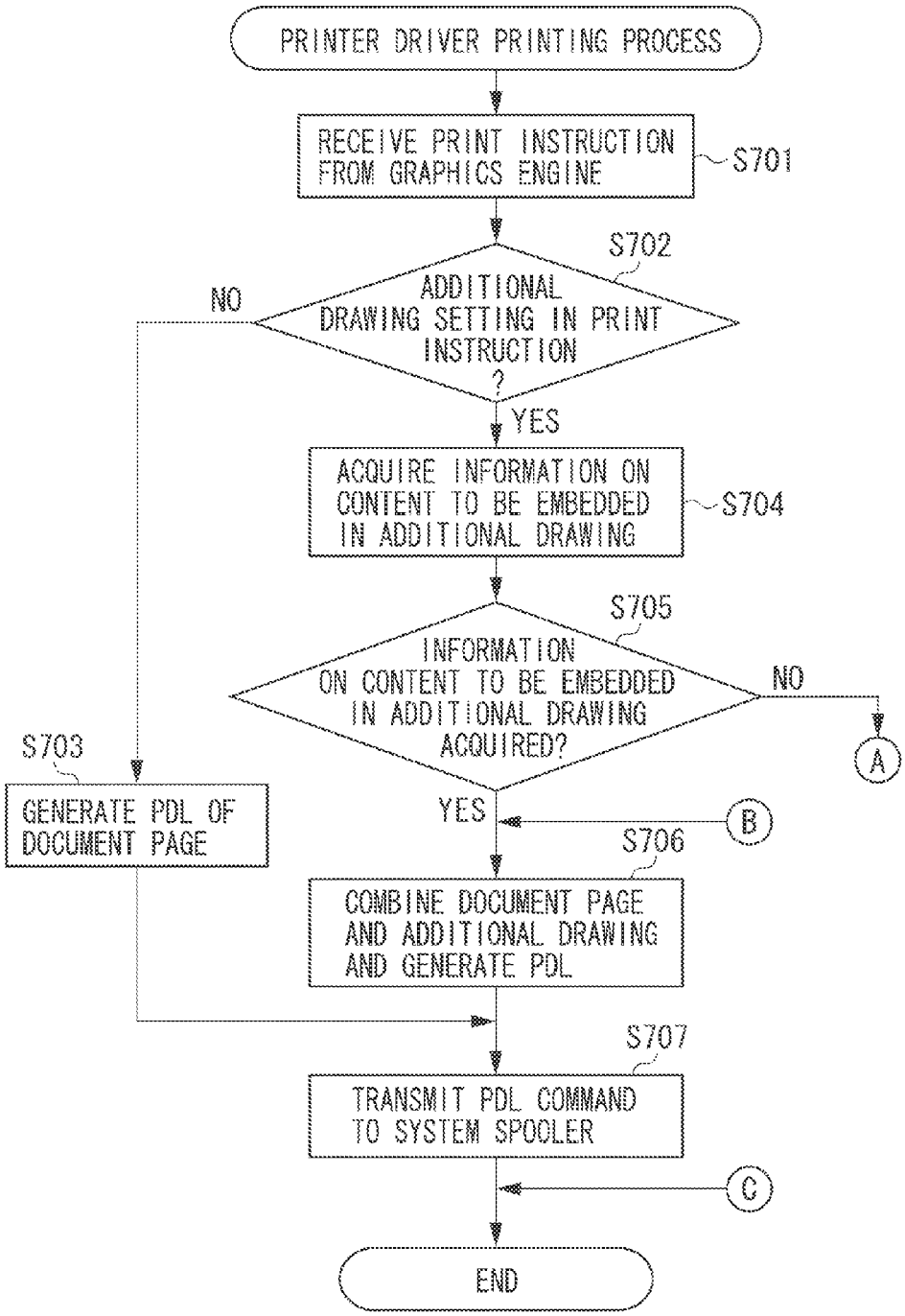
PRINTER DRIVER PRINTING PROCESS
RECEIVE PRINT INSTRUCTION FROM GRAPHICS ENGINE
S701
S702
ADDITIONAL DRAWING SETTING IN PRINT INSTRUCTION ?
NO
YES
ACQUIRE INFORMATION ON CONTENT TO BE EMBEDDED IN ADDITIONAL DRAWING
S704
S705
INFORMATION ON CONTENT TO BE EMBEDDED IN ADDITIONAL DRAWING ACQUIRED?
NO
A
S703
GENERATE PDL OF DOCUMENT PAGE
YES
B
S706
COMBINE DOCUMENT PAGE AND ADDITIONAL DRAWING AND GENERATE PDL
S707
TRANSMIT PDL COMMAND TO SYSTEM SPOOLER
C
END

FIG. 7B

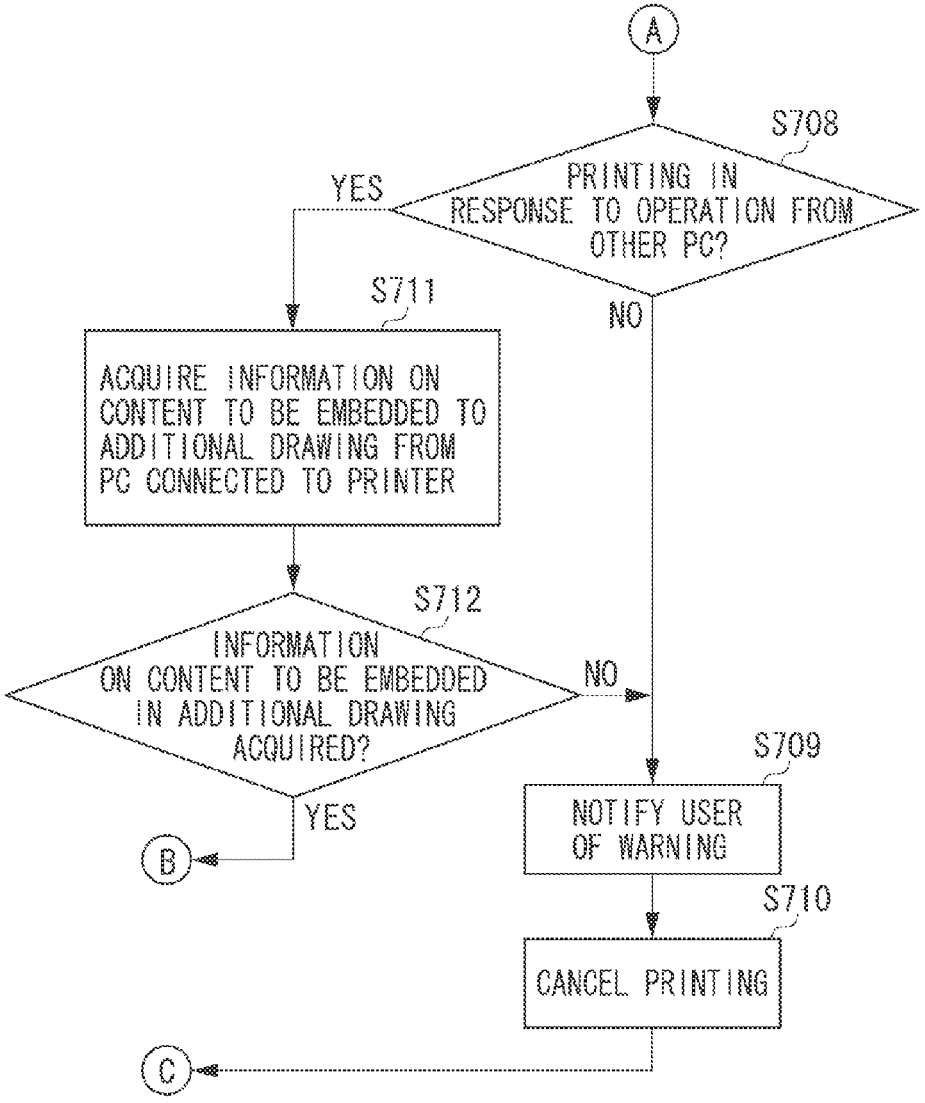
A
S708
PRINTING IN RESPONSE TO OPERATION FROM OTHER PC?
YES
NO
S711
ACQUIRE INFORMATION ON CONTENT TO BE EMBEDDED TO ADDITIONAL DRAWING FROM PC CONNECTED TO PRINTER
S712
INFORMATION ON CONTENT TO BE EMBEDDED IN ADDITIONAL DRAWING ACQUIRED?
NO
YES
B
S709
NOTIFY USER OF WARNING
S710
CANCEL PRINTING
C

FIG. 8

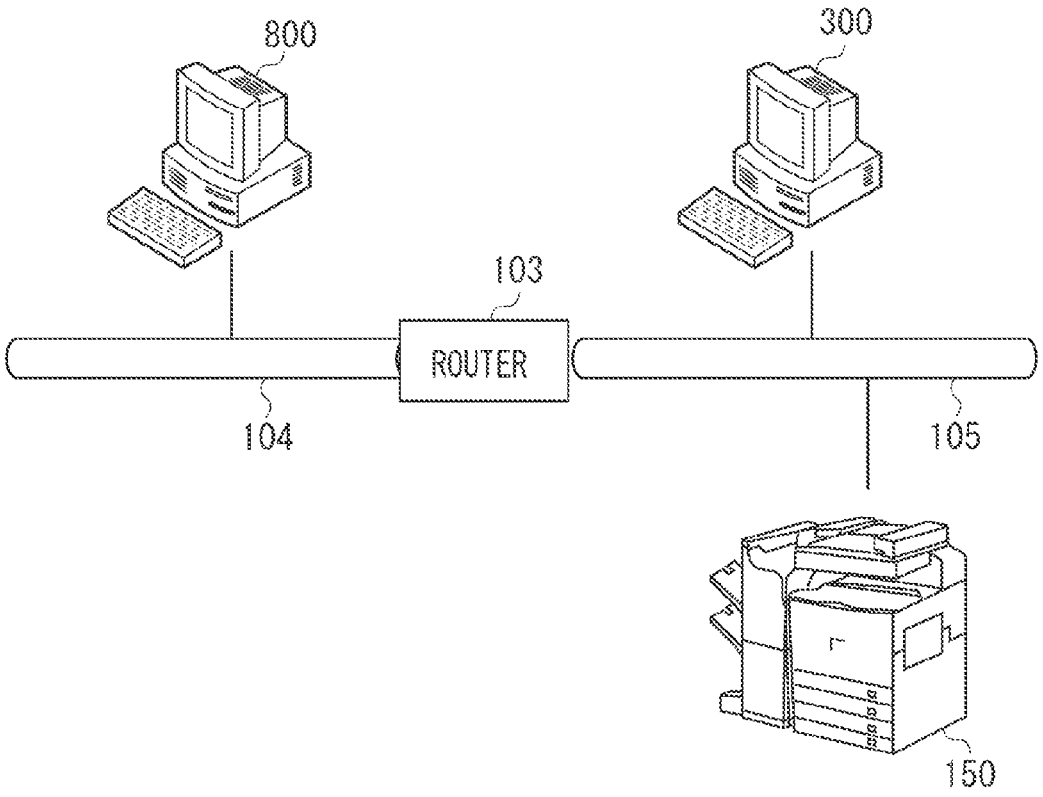

FIG. 9A

"MAC ADDRESS"
002B00000

FIG. 9B

"USER NAME"	"IP ADDRESS"	"MAC ADDRESS"
Hasama		

FIG. 9C

"USER NAME"	"IP ADDRESS"	"MAC ADDRESS"

FIG. 10

INFORMATION PROCESSING APPARATUS, CONTROL METHOD THEREOF, AND PROGRAM

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an information processing apparatus, a control method thereof, and a program.

2. Description of the Related Art

A function can be added to a printer driver installed in a host computer by additionally installing a function expansion module to the printer driver.

An example of the additional function is a copy-forgery-inhibited pattern function (e.g., refer to Japanese Patent Application Laid-Open No. 2001-197297). A copy-forgery-inhibited pattern image in an original document (i.e., a printed output from a printer) simply looks like a pattern or a background image to a viewer. However, when the original document is copied, a predetermined text or image becomes visualized. The copy-forgery-inhibited pattern thus prevents use of copy products.

Colors in the copy-forgery-inhibited pattern image and the text that becomes visualized when the original document is copied can be freely set in such a copy-forgery-inhibited pattern function added to the printer driver. Further, output date and time and information unique to a printing apparatus can also be set in the copy-forgery-inhibited pattern image.

However, according to conventional techniques, if the output date and time and the information unique to a printing apparatus cannot be acquired, there is no information to be embedded in the copy-forgery-inhibited pattern image. A copy-forgery-inhibited pattern image that has no embedded information thus becomes generated.

Such an issue is not limited to the copy-forgery-inhibited pattern image, and a similar issue occurs in a bar code, a two-dimensional code, and digital watermark.

SUMMARY OF THE INVENTION

According to an aspect of the present invention, an information processing apparatus which causes a printing apparatus to print an image to which information is added, includes a causing unit for causing, when a setting is specified for adding information to an image and the information cannot be acquired from a router, the printing apparatus not to print the image, and for causing, when a setting is specified for adding information to an image and the information can be acquired from a router, the printing apparatus to print an image to which the acquired information is added.

According to another aspect of the present invention, unnecessary printing can be prevented.

Further features and aspects of the present invention will become apparent from the following detailed description of exemplary embodiments with reference to the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate exemplary embodiments, features, and aspects of the invention and, together with the description, serve to explain the principles of the invention.

FIG. **1** is a block diagram illustrating a configuration of a system including a computer according to an exemplary embodiment of the present invention.

FIG. **2** is a block diagram illustrating a typical print system according to an exemplary embodiment of the present invention.

FIG. **3** illustrates a system configuration according to an exemplary embodiment of the present invention.

FIG. **4** is a flowchart illustrating print processing performed by a printer driver.

FIG. **5** illustrates an example of a warning screen.

FIG. **6** is a flowchart illustrating print processing performed by a printer driver in a case where there is a plurality of information pieces on contents to be embedded in an additional drawing.

FIGS. **7**A and **7**B are a flowchart illustrating print processing performed by a printer driver in a remote environment.

FIG. **8** illustrates a system configuration according to an exemplary embodiment of the present invention.

FIGS. **9**A, **9**B, and **9**C illustrate examples of information about the content to be embedded in the additional drawing.

FIG. **10** illustrates an example of print data.

DESCRIPTION OF THE EMBODIMENTS

Various exemplary embodiments, features, and aspects of the invention will be described in detail below with reference to the drawings.

A printing apparatus according to the present invention will be described below. FIG. **1** is a block diagram illustrating a configuration of a system including an information processing apparatus and the printing apparatus according to a first exemplary embodiment. Unless otherwise stated, the present invention may be applied to a single device or a system including a plurality of devices as long as the functions of the present invention can be implemented. Further, unless otherwise stated, the present invention may be applied to a system in which devices are connected via a network such as a local area network (LAN) and a wide area network (WAN) to perform processing, as long as the functions of the present invention can be implemented.

Referring to FIG. **1**, a host computer **300** includes a central processing unit (CPU) **1**. The CPU **1** processes a document which includes a mixture of diagrams, images, characters, and tables (including spreadsheets) based on a document processing program stored in a program read-only memory (ROM) in a ROM **3**, or an external memory **11**. Further the CPU **1** collectively controls each of the devices connected to a system bus **4**.

The program ROM in the ROM **3** or the external memory **11** stores an operating system program (OS), i.e., a control program of the CPU **1**. Further, a font ROM in the ROM **3** or the external memory **11** stores font data used in the document processing described above. A data ROM in the ROM **3** or the external memory **11** stores various data pieces used in the document processing described above.

A random access memory (RAM) **2** functions as a main memory and a work area of the CPU **1**. A keyboard interface (I/F) **5** controls a key input from a keyboard **9** or a pointing device (not illustrated). A display I/F **6** controls displaying on a display **10**. An external memory I/F **7** controls access to the external memory **11** such as a hard disk (HD) or a floppy disk (FD). The external memory **11** stores a boot program, various applications, the font data, a user file, an edit file, printer drivers, and the like.

A printer I/F **8** is connected to a printer **150** via a predetermined bi-directional interface **22**, and controls communication between the printer **150**. The CPU **1** rasterizes outline

fonts on a display information RAM set on the RAM **2**, and thus realizes a "what you see is what you get" (WYSIWYG) function on the display **10**.

Further, the CPU **1** opens various windows registered based on a command instructed by a mouse cursor (not illustrated) on the cathode ray tube (CRT) display **10**, and performs various types of data processing. When a user executes printing, the user opens a print setting window and can specify printer settings, and a print processing method with respect to the printer driver including selection of a print mode.

A printer CPU **12** in the printer **150** outputs an image signal as output information to a printing unit (printer engine) **17** connected to a system bus **15** based on the control program. The control program is stored in a program ROM in a ROM **14** or an external memory **21**.

The program ROM in the ROM **14** stores the control program of the CPU **12** or the like. A font ROM in the ROM **14** stores font data used in generating the output information, and a data ROM in the ROM **14** stores, if the printer does not include the external memory **21** such as the HD, information to be used in the host computer **300**.

The CPU **12** can communicate with the host computer **300** via an input unit **16**, and can notify the host computer **300** of information in the printer. A RAM **13** functions as the main memory and the work area of the CPU **12**. A memory capacity of the RAM **13** can be increased by connecting an option RAM to an expansion port (not illustrated). The RAM **13** is used as an output information expansion area, an environmental data storing area, and a non-volatile (NV) RAM. A memory controller (MC) **18** controls access to the external memory **21** such as the HD or an integrated circuit (IC) card.

The external memory **21** is connected as an option, and stores the font data, an emulation program, and form data. An operation panel **20** includes operation switches and light emitting diode (LED) indicators. The number of external memories is not limited to one. The printer may be configured to include at least one or more external memories and to be connectable to an optional font card in addition to built-in fonts and a plurality of external memories storing programs for interpreting printer control languages of different languages. Further, the printer may include the NVRAM (not illustrated) for storing printer mode setting information input from the operation panel **20**.

FIG. **2** illustrates a configuration of typical print processing performed in the host computer directly connected or connected via a network to the printing apparatus such as a printer. Referring to FIG. **2**, an application **201**, a graphic engine **202**, a printer driver **203**, and a system spooler **204** exist as files stored in the external memory **11**. Such files are program modules which are loaded to the RAM **2** and executed by the OS or a module using the program module. The application **201** and the printer driver **203** can be added to the external memory **11** such as the FD, a compact disk (CD)-ROM (not illustrated), or the external memory **11** such as the HD via the network (not illustrated).

The application **201** stored in the external memory **11** is loaded to the RAM **2** and executed. If a user performs printing on the printer **150** from the application **201**, the printer outputs (performs drawing) using the graphic engine **202** that is similarly loaded on the RAM **2** to be executable.

The graphic engine **202** loads to the RAM **2** from the external memory **11**, the printer driver **203** prepared for each printing apparatus. The graphic engine **202** then uses the printer driver **203** to convert the output of the application **201** to a control command for the printer. The converted printer control command is output by the OS to the printer **150** via the system spooler **204** loaded to the RAM **2** and via the interface **22**.

FIG. **3** illustrates an example of the configurations of the printer driver **203** and the printer **150** according to the present exemplary embodiment. According to the present exemplary embodiment, the printer driver **203** includes a print control unit **301**, an additional drawing processing unit **302**, an additional drawing information determination unit **303**, and a print processing unit **304**. The print control unit **301** controls the print data. The additional drawing processing unit **302** processes the additional drawing. The additional drawing information determination unit **303** determines the additional drawing information. The print processing unit **304** processes the print data.

Additional drawing processing performed by the printer driver **203** according to the present exemplary embodiment will be described below with reference to FIG. **4**. The program of the printer driver **203** according to the processing in flowchart illustrated in FIG. **4** is stored in the HD **11** of the computer, read out to the RAM **2**, and executed by the CPU **1**.

FIG. **10** illustrates an example of a document to be printed according to the present exemplary embodiment. Referring to FIG. **4**, in step S**401**, upon the user executing printing of the document illustrated in FIG. **10** from the application **201**, the printer driver **203** is called via the graphics engine **202**. The print control unit **301** then receives the print data and a print instruction of the document.

In step S**402**, the additional drawing processing unit **302** determines whether the print instruction received in step S**401** includes an additional drawing setting. If the additional drawing processing unit **302** determines that the print instruction received in step S**401** does not include the additional drawing setting (NO in step S**402**), the processing proceeds to step S**403** without performing additional drawing processing.

In step S**403**, the print processing unit **304** converts the print data of the document received in step S**401** to a print command referred to as page description language (PDL).

In step S**407**, the print processing unit **304** transmits the print command to the system spooler **204**.

On the other hand, if the additional drawing processing unit **302** determines that the print instruction includes the additional drawing setting (YES in step S**402**), the processing proceeds to step S**404**. In step S**404**, the additional drawing processing unit **302** acquires from the computer which instructed printing, the information about the content to be embedded in the additional drawing set in the printing instruction received in step S**401**. According to the present exemplary embodiment, the information about the content to be embedded in the additional drawing is "medium access control (MAC) address" as illustrated in FIG. **9**A. However, the information may be any information as long as the computer or the user can be identified, such as "user name" or "Internet protocol (IP) address".

In step S**405**, the additional drawing information determination unit **303** determines whether the information to be embedded in the additional drawing which is acquired in step S**404** has been normally acquired. If the additional drawing information determination unit **303** determines that the information to be embedded in the additional drawing has been normally acquired (YES in step S**405**), the processing proceeds to step S**406**.

In step S**406**, the additional drawing processing unit **302** combines the print data of the document received in step S**401** and the additional drawing data, and converts the data to the

print command referred to as PDL. In step S407, the print processing unit 304 transmits the print command to the system spooler 204.

If the additional drawing information determination unit 303 determines that the information to be embedded in the additional drawing has not been normally acquired (NO in step S405), the processing proceeds to step S408.

In step S408, the additional drawing processing unit 302 notifies the user of a warning screen 500 as illustrated in FIG. 5 indicating that the information to be embedded cannot be acquired. The processing then proceeds to step S409. In step S409, the print processing unit 304 discards the print data of the document and the print instruction received in step S401, and cancels printing.

By performing the processing according to the flowchart illustrated in FIG. 4, if the additional drawing setting is specified but the information to be embedded in the additional drawing is not normally acquired, the warning screen indicating that printing will be cancelled is notified to the user, and printing is cancelled.

By the above-described procedure, if the information to be embedded in the additional drawing is not normally acquired, the warning screen indicating that printing will be cancelled is notified to the user, and printing is cancelled. As a result, generation of the copy-forgery-inhibited pattern image which is not visualized when the original document is copied can be prevented.

According to the first exemplary embodiment, there is only one piece of information about the content to be embedded in the additional drawing set by the print instruction. According to a second exemplary embodiment, a plurality of pieces of information about the content is to be embedded in the additional drawing set by the print instruction, as will be described below with reference to a flowchart illustrated in FIG. 6.

The program of the printer driver 203 according to the flowchart illustrated in FIG. 6 is stored in the HD 11 of the computer, read out to the RAM 2, and executed by the CPU 1.

The processing performed in step S601 to step S603 illustrated in FIG. 6 are similar to those performed in step S401 to step S403 illustrated in FIG. 4, so that description will be omitted. In step S604, the additional drawing processing unit 302 acquires from the computer that has instructed printing, the information about the content to be embedded in the additional drawing set in the print instruction received in step S601. According to the present exemplary embodiment, the information about the content to be embedded in the additional drawing is "user name", "IP address", and "MAC address" as illustrated in FIGS. 9B and 9C. However, the information may be any information as long as the computer or the user can be identified. Further, there may be any number of information pieces about the content to be embedded to the additional drawing.

In step S605, the additional drawing information determination unit 303 determines whether at least one piece of information to be embedded in the additional drawing is acquired in step S604. If the additional drawing information determination unit 303 determines that at least one piece of information to be embedded in the additional drawing is acquired as illustrated in FIG. 9B (YES in step S605), the processing proceeds to step S606.

In step S606, the additional drawing processing unit 302 combines the print data of the document received in step S601 and the additional drawing data, and converts the data to the print command referred to as PDL. In step S607, the print processing unit 304 transmits the print command to the system spooler 204.

If the additional drawing information determination unit 303 determines that none of the information to be embedded in the additional drawing is acquired as illustrated in FIG. 9C (NO in step S605), the processing proceeds to step S608.

In step S608, the additional drawing processing unit 302 notifies the user of the warning screen 500 as illustrated in FIG. 5 indicating that the information to be embedded cannot be acquired. The processing then proceeds to step S609. In step S609, the print processing unit 304 discards the print data of the document received and the print instruction in step S601, and cancels printing.

By performing the processing according to the flowchart illustrated in FIG. 6, if the additional drawing setting is specified, there is a plurality of pieces of information to be embedded in the additional drawing, and at least one of the information can be acquired, only the acquired information is generated as the copy-forgery-inhibited pattern image.

According to the above-described processing, if there is a plurality of pieces of information to be embedded in the additional drawing and at least one of the information can be acquired, only the acquired information is generated as the copy-forgery-inhibited pattern image. As a result, the copy-forgery-inhibited pattern image which becomes visualized when the original document is copied can be generated.

According to the first exemplary embodiment, the computer instructs the printer to perform output processing via the network. According to a third exemplary embodiment, if a client PC is to execute printing, the application or the printer driver conventionally executed by the client PC is executed by a server PC, such as in MetaFrame and remote desktop. The system according to the third exemplary embodiment will be described below with reference to a flowchart illustrated in FIGS. 7A and 7B.

FIG. 8 is a block diagram illustrating a schematic configuration of a network system according to the present exemplary embodiment of the present invention. Referring to FIG. 8, the network system includes a client PC 800, a server PC 300, and an output device 150 that receives print data from the server PC 300 and performs printing. Further, each of the components is connected to a LAN 104 or a WAN 105 via a router 103. A MAC address filtering and an IP address filtering are set to the router 103, and only the "MAC address" and the "IP address" of the client PC 800 are described in the router 103.

According to the present exemplary embodiment, the application 201 and the printer driver 203 in the server PC 300 are executed from the client PC 800 using the remote desktop.

The program of the printer driver 203 according to the flowchart illustrated in FIGS. 7A and 7B is stored in the HD 11 of the server PC 300, read out to the RAM 2, and executed by the CPU 1.

The processing performed in step S701 to step S703 illustrated in FIGS. 7A and 7B are similar to those performed in step S401 to step S403 illustrated in FIG. 4, so that description will be omitted. In step S704, the additional drawing processing unit 302 acquires from the client PC 800, the information about the content to be embedded to the additional drawing set in the print instruction received in step S701. According to the present exemplary embodiment, the information about the content to be embedded in the additional drawing is "MAC address" as illustrated in FIG. 9A. However, the information may be any information as long as the computer or the user can be identified, such as "user name" or "IP address". Further, there may be any number of information pieces about the content to be embedded to the additional drawing.

According to the present exemplary embodiment, the MAC address filtering is set to the router 103, and only the

MAC address and the IP address of the client PC **800** are described in the router **103**. If acquisition of the "MAC address" of the client PC **800** is attempted from the server PC **300** in such a state, the router **103** blocks communication, so that the "MAC address" of the client PC **800** cannot be acquired from the server PC **300**.

In step S**705**, the additional drawing information determination unit **303** determines whether the information to be embedded in the additional drawing which is acquired in step S**704** has been normally acquired. If the additional drawing information determination unit **303** determines that the information to be embedded in the additional drawing has been normally acquired (YES in step S**705**), the processing proceeds to step S**706**.

In step S**706**, the additional drawing processing unit **302** combines the print data of the document received in step S**701** and the additional drawing data, and converts the data to the print command referred to as PDL. In step S**707**, the print processing unit **304** transmits the print command to the system spooler **204**.

On the other hand, if the additional drawing information determination unit **303** determines that the information to be embedded in the additional drawing has not been normally acquired (NO in step S**705**), the processing proceeds to step S**708**.

In step S**708**, the additional drawing processing unit **302** determines whether printing is to be performed according to an operation received from another computer. If the additional drawing unit **303** determines that printing is to be performed not according to an operation received from another computer (NO in step S**708**), the processing proceeds to step S**709**.

In step S**709**, the additional drawing processing unit **302** notifies the user of the warning screen **500** as illustrated in FIG. **5** indicating that the information to be embedded cannot be acquired. The processing then proceeds to step S**710**. In step S**710**, the print processing unit **304** discards the print data of the document and the print instruction received in step S**701**, and cancels printing.

On the other hand, if the additional drawing processing unit **302** determines that printing is to be performed according to an operation received from another computer (YES in step S**708**), the processing proceeds to step S**711**. In step S**711**, the additional drawing processing unit **302** acquires from the computer connected to the printer, the information about the content to be embedded in the additional drawing set by the print instruction received in step S**701**. According to the present exemplary embodiment, the additional drawing processing unit **302** acquires the information from the server PC **300**. The processing then proceeds to step S**712**.

In step S**712**, the additional drawing information determination unit **303** determines whether the information to be embedded in the additional drawing is normally acquired in step S**711**. If the additional drawing information determination unit **303** determines that the information to be embedded in the additional drawing is normally acquired (YES in step S**712**), the processing proceeds to step S**706**.

In step S**706**, the additional drawing processing unit **302** combines the print data of the document received in step S**701** and the additional drawing data, and converts the data to the print command referred to as PDL. In step S**707**, the print processing unit **304** transmits the print command to the system spooler **204**.

If the additional drawing information determination unit **303** determines that the information to be embedded in the additional drawing is not normally acquired (NO in step S**712**), the processing proceeds to step S**709**.

In step S**709**, the additional drawing processing unit **302** notifies the user of the warning screen **500** as illustrated in FIG. **5** indicating that the information to be embedded cannot be acquired. The processing then proceeds to step S**710**. In step S**710**, the print processing unit **304** discards the print data of the document and the print instruction received in step S**701**, and cancels printing.

By performing the processing according to the flowchart illustrated in FIGS. **7**A and **7**B, if the additional drawing setting is specified and the information to be embedded in the additional drawing cannot be acquired, acquisition of the information to be embedded in the additional drawing is attempted from the PC which executes printing.

According to the above-described processing, if the information to be embedded in the additional drawing can be acquired, only the acquired information is generated as the copy-forgery-inhibited pattern image. As a result, the copy-forgery-inhibited pattern image which becomes visualized when the original document is copied can be generated.

The present invention can also be realized by executing the following processing. More specifically, software (a program) for realizing the functions of the above exemplary embodiments is supplied to a system or an apparatus via a network or various storage media and a computer (or CPU or micro processing unit (MPU)) of the system or the apparatus reads and executes the program.

While the present invention has been described with reference to exemplary embodiments, it is to be understood that the invention is not limited to the disclosed exemplary embodiments. The scope of the following claims is to be accorded the broadest interpretation so as to encompass all modifications, equivalent structures, and functions.

This application claims priority from Japanese Patent Application No. 2010-272702 filed Dec. 7, 2010, which is hereby incorporated by reference herein in its entirety.

What is claimed is:

1. An information processing apparatus comprising:

an input unit configured to input an image;

a setting unit configured to set items to be synthesized as a copy-forgery-inhibited pattern image with the input image;

an obtaining unit configured to obtain the items set by the setting unit; and

a control unit configured to control

(a) a printing apparatus to print, if all of the set items are obtained by the obtaining unit, an image generated by synthesizing the input image with a copy-forgery-inhibited pattern image which is generated based on the obtained all of the items,

(b) the printing apparatus to print, if one of the set items is not obtained but remaining set items are obtained by the obtaining unit, an image generated by synthesizing the input image with a copy-forgery-inhibited pattern image which is generated based on the obtained remaining set items, and

(c) the printing apparatus to print, if none of the set items is obtained by the obtaining unit, neither the input image nor a copy-forgery-inhibited pattern.

2. The information processing apparatus according to claim **1**, wherein the set items include a MAC address of a different information processing apparatus.

3. An information processing method comprising:

inputting an image;

setting items to be synthesized as a copy-forgery-inhibited pattern image with the input image;

obtaining the items set by the setting; and

controlling

(a) a printing apparatus to print, if all of the set items are obtained by the obtaining, an image generated by synthesizing the input image with a copy-forgery-inhibited pattern image which is generated based on the obtained all of the items,

(b) the printing apparatus to print, if one of the set items is not obtained but remaining set items are obtained by the obtaining, an image generated by synthesizing the input image with a copy-forgery-inhibited pattern image which is generated based on the obtained remaining set items, and

(c) the printing apparatus to print, if none of the set items is obtained by the obtaining, neither the input image nor a copy-forgery-inhibited pattern.

4. The information processing method according to claim **3**, wherein the set items include a MAC address of a different information processing apparatus.

5. A non-transitory computer-readable storage medium for storing a program executable by a computer for executing an information processing method, the method comprising:

inputting an image;

setting items to be synthesized as a copy-forgery-inhibited pattern image with the input image;

obtaining the items set by the setting; and

controlling

(a) a printing apparatus to print, if all of the set items are obtained by the obtaining, an image generated by synthesizing the input image with a copy-forgery-inhibited pattern image which is generated based on the obtained all of the items,

(b) the printing apparatus to print, if one of the set items is not obtained but remaining set items are obtained by the obtaining, an image generated by synthesizing the input image with a copy-forgery-inhibited pattern image which is generated based on the obtained remaining set items, and

(c) the printing apparatus to print, if none of the set items is obtained by the obtaining, neither the input image nor a copy-forgery-inhibited pattern.

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